



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7:

C07D 239/94, 215/54, A61K 31/517, 31/4706, A61P 35/00, C07F 9/40, C07D 401/12, 493/12, 403/12, 405/12, 413/12

A1

(11) International Publication Number:

WO 00/51991

(43) International Publication Date:

8 September 2000 (08.09.00)

(21) International Application Number:

PCT/EP00/01496

(22) International Filing Date:

24 February 2000 (24.02.00)

(30) Priority Data:

199 08 567.6	27 February 1999 (27.02.99)	DE
199 11 366.1	15 March 1999 (15.03.99)	DE
199 28 306.0	21 June 1999 (21.06.99)	DE
60/149,329	17 August 1999 (17.08.99)	US
199 54 816.1	13 November 1999 (13.11.99)	DE

(71) Applicant (for all designated States except US): BOEHRINGER INGELHEIM PHARMA KG [DE/DE]; D-55216 Ingelheim/Rhein (DE).

(72) Inventors; and

1 :23

(75) Inventors/Applicants (for US only): HIMMELSBACH, Frank [DE/DE]; Ahornweg 16, D-88441 Mittelbiberach (DE). LANGKOPF, Elke [DE/DE]; Schloss 3, D-88447 Warthausen (DE). JUNG, Birgit [DE/DE]; Mühlstrasse 23, D-55270 Schwabenheim (DE). METZ, Thomas [DE/AT]; Traungasse 6/5, A-1030 Vienna (AT). SOLCA. Flavio [CH/AT]; Fimbingergasse 1/9, A-1230 Vienna (AT). BLECH, Stefan [DE/DE]; Müllerweg 9, D-88447 Warthausen (DE).

(74) Agent: LAUDIEN, Dieter, Boehringer Ingelheim GmbH, Corporate Patent Division, D-55216 Ingelheim/Rhein (DE).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(\$4) Title: 4-AMINO-QUINAZOLINE AND QUINOLINE DERIVATIVES HAVING AN INHIBITORY EFFECT ON SIGNAL TRANSSDUCTION MEDIATED BY TYROSINE KINASES

(57) Abstract

The present invention relates to bicyclic heterocycles of general formula (I), wherein Ra to Rd, A to G and X are defined as in claim 1, the tautomers, the stereoisomers and the salts thereof, particularly the physiologically acceptable salts thereof particularly the physiologically acceptable salts thereof with inorganic or organic acids or bases which have valuable pharmacological properties, particularly an inhibiting effect on signal transduction mediated by tyrosine kinases, their use for treating diseases, particularly tumoral diseases, diseases of the lungs and respiratory tract, and the preparation thereof.